

by the gradual progress of the organic disease which ultimately terminated his life. It has been remarked that he suffered from a hypochondriasis which increased year after year. His death took place suddenly, from disease of the heart, on June 14, 1875, having scarcely completed the fifty-third year of his age.

D'Arrest was a member of several scientific societies, including the Societies of Sciences of Denmark and Sweden, and the Academies of Sciences of St. Petersburg and Munich. He was elected an Associate of the Royal Astronomical Society on May 12, 1848. He was also a Knight of the Danish Order of the Dannebrog.

In addition to the numerous papers contributed to astronomical science inserted in the *Astronomische Nachrichten* and *Monthly Notices*, Professor D'Arrest was also the author of the following more elaborate works:—

*Ueber das System der Kleinen Planeten Zwischen Mars und Jupiter.* 1851.

*Resultate aus Beobachtungen der Nebelflecken und Sternhaufen.* 1856.

*Instrumentum magnum aequatorium in Specula Universitatis Havnienses nuper erectum.* 1861.

*Teleskopisk Undersøgelse af Egne omkring det Sted paa Himlen, hvor Tycho's nye Stjerne har vist sig 1572-1574.* 1864.

*Siderum Nebulosorum Observationes Havnienses.* 1867.

*Undersøgelse over de nebule Stjerner i Henseende til deres spektralanalytiske Egenskaber.* 1872.

CLAUDE LOUIS MATHIEU was born at Macon, Saône-et-Loire, on November 25, 1783, in humble circumstances. His father, a joiner by trade, intended his son to follow his own occupation; but desiring to make young Mathieu a superior workman, he sent him to an elementary school in his native town, where he received the rudiments of his education, and where he was able to attend a gratuitous course of instruction in drawing. He was soon noted for his aptitude and general assiduity in his studies; and it was here that he first acquired a taste for the study of mathematics, but without the guidance of a teacher. But finding himself frequently in the presence of serious difficulties, he solicited the advice of the learned and venerable Abbé Sigorgne, who became much interested in the young student. The difficulties were great, but not insurmountable, and he was encouraged by reading daily in the preface of Lacroix's "Algebra" the precept of D'Alembert:—"Allez en avant, et la fin vous viendra." Having heard of the École Polytechnique, all his efforts were at once directed to become a student in that celebrated training-school. He left Macon in 1801, and arrived in Paris almost without resources. He was glad to accept the offer of a lodging in a small room under the Observatory of

Delambre when he attended a gratuitous course of study at the "École centrale des quatre nations," where he eventually obtained the first prize for mathematics. In 1803 he was admitted a pupil at the École Polytechnique, where he remained two years, leaving it in 1805 with the title of "Élève ingénieur des ponts et chaussées."

Five years after leaving his native town, through an acquaintance formed with Arago at the École Polytechnique, M. Mathieu was appointed to the temporary charge of the Paris Observatory during the absence of his friend in Spain, while engaged with Biot on an expedition for the continuation of the observed arc of meridian as far as the Balearic Islands. In 1808 Mathieu himself was associated with Biot in making a series of pendulum observations at different stations on the French meridian, for which he obtained in 1809, and again in 1812, the astronomical prize founded by Lalande. In 1807 he received the appointment of Titular Secretary to the Paris Observatory.

Mathieu was elected in 1817 a member of the Académie des Sciences, succeeding Messier in the section of Astronomy, and at the same time he was appointed a member of the Bureau des Longitudes. Subsequently he became a teacher of geodesy, &c. at the École Polytechnique; in 1829, professor of analysis; and finally, examiner de sortie in the same school, where his name is still honourably remembered as a clear, methodical, and conscientious professor.

Although Mathieu had devoted so large a portion of his life to astronomical pursuits as the colleague of Arago, at the Paris Observatory, by his numerous observations and researches on the figure of the Earth, on refraction, on the obliquity of the ecliptic, on the parallax of the fixed stars, &c., and when on account of his age he might reasonably have claimed some relaxation from active work, he accepted, after the death of Arago, the heavy charge of superintending the calculations and the annual publication of the *Connaissance des Temps* and the *Annuaire* of the Bureau des Longitudes. Latterly, however, his duties were confined chiefly to the superintendence of the *Annuaire*, and it is to him that we have been indebted for those portions relating to astronomy, the physics of the globe, and statistics, the value of which for reference has been so highly appreciated even out of France. M. Mathieu continued this supervision to the last, and it was only a few weeks before his death, with a failing hand, he examined the concluding proof-sheets of the last volume of the *Annuaire*, which had been so long the principal object of his solicitude.

On the death of Delambre, in 1822, a most important part of his *l'Histoire de l'Astronomie au XVIII<sup>e</sup> siècle* was left unfinished. This distinguished astronomer left the completion and publication of the work as a legacy to Mathieu; and, in consequence, it appeared in 1827, enriched by him with an historical preface, a

large number of important notes, and a very exhaustive analytical table of contents.

M. Mathieu served on several important Commissions. Among those relating to science may be mentioned the joint French and English Commission appointed to make a geodetical connection between the English and French coasts by means of a series of triangles carried across the English Channel; the Light-house Commission, of which he was one of the leading members; and the Metric Commission. In 1867 he was chosen President of the International Coinage Commission, an honour repeated in 1872, when he was the President of the International Metric Commission. He also served on the jury at the London International Exhibitions of 1851 and 1862, and at the Paris International Exhibition of 1855. In 1829 he was made a Chevalier, in 1855 an Officer, and in 1863 a Commander of the Legion of Honour. He was elected an Associate of this Society on May 12, 1848.

Following the example of his friend and relative, Arago, Mathieu during the period of his middle life divided his time between science and politics. It is not necessary, however, in this place to enter into much detail respecting his political career. It will be sufficient to remark that he represented his native town in the Chamber of Deputies, without interruption, from 1835 to 1848. After the Revolution of February 1848 the Department of Saône-et-Loire elected him to the Constituent Assembly by 127,052 votes out of 132,000. In 1849 he retired from the Assembly, after which his time and energy were chiefly devoted to the promotion of science; but he retained a great interest in political events to the last. During the siege and the more terrible scenes of the Commune he expressed no desire to leave Paris, and his example encouraged his friends around him during this trying time.

M. Mathieu married the sister of Arago, and we have already noticed that the subsequent careers of the two astronomers were very much in common, following the same tastes both scientific and political. His daughter became the wife of our late Associate, M. Laugier, whose death the Council had to deplore in a recent Annual Report. The patriarchal age to which M. Mathieu reached shows that he was possessed of a strong and healthy constitution, which only succumbed at last to a gradual decay of nature. His death occurred in the first week of March 1875, in the ninety-third year of his age, and at his funeral, on March 8, discourses were pronounced over his grave by MM. Faye, Loewy, Resal, and Guillemaut.

During the preparations for the Exhibition of 1855, the writer of this notice, while residing in Paris in connection with the Exhibition, had the opportunity of associating with the principal Paris astronomers, and he has retained many pleasing reminiscences of the urbanity and kindness of the three astronomers, Mathieu, Delaunay, and Laugier, who resided together in the

same house in the Rue Notre Dame des Champs, all of whom were ever ready to assist him by their counsel, and in other ways. It has since become his melancholy duty to record briefly, in the obituary section of our Annual Reports, the eminent services to science of each of these three distinguished men.

The published works of M. Mathieu are not numerous. In addition to his reports on scientific subjects and other papers alluded to in this notice, the following memoirs have appeared in the Appendices to the *Connaissance des Temps*:—

1. *Sur les expériences du Pendule, faites par les navigateurs Espagnols en différents points du globe.* 1816.
  2. *Résultats des expériences faites avec des pendules de comparaison aux îles Malouines et à la Nouvelle Hollande.* 1826.
  3. *Rapport sur un mémoire de M. Puissant sur la détermination de la figure de la terre par les mesures géodésiques et astronomiques.* 1829.
  4. *Note relative au mémoire de M. Bessel, et aux catalogues des 36 étoiles fondamentales.* 1829.
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